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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/777,818

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Gopal P. Mathur

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VEDDER PRICE KAUFMAN & KAMMHOLZ
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CHICAGO, IL 60601

EXAMINER

COLON SANTANA, EDUARDO

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/777,818

Applicant(s)

MATHUR, GOPAL P.

Examiner

Eduardo Colon Santana

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/12/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 2/12/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

2. Claims 18-21 are objected to because of the following informalities: Claims 18-21 are dependent from claim 11. They should depend on claim 17, which is a method claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4, 5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Yao-Joe Yang et al. 1997 IEEE International Conference, article title "Effect of air dampening on the Dynamics of Non-Uniform Deformations of Micro-Structures".

Referring to claims 1, 2, 4 and 8, Yao-Joe Yang et al. discloses flexible mechanical microstructure (figure 1) as a squeeze film damper attached to a vibrating surface (substrate), the squeeze film damper having a substantially rectangular rigid planar base; a substantially

planar flexible cover (deformable beam) supported above the substantially rigid base structure (substrate) by a support structure (rigid support), such that the substrate, rigid support and the deformable beam enclose a volume filled with air, which is a gas.

As to claim 5, Yao-Joe Yang depicts a squeeze film damper, showing a plurality (only 2 shown) of support structures (rigid support) about the perimeter of the rigid planar base (substrate).

4. Claims 1, 2, 4-6, 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Jee U.S. Patent No. 6,638,640.

Referring to claims 1, 2 and 8, Jee discloses a multi-layered plate with damping capacity (see figures 1 and 2, and respective portions of the specification). Jee further discloses an apparatus for reducing acoustic noise, in which a flexible plate (2) acts as a squeeze film damper attached to a vibrating surface (1) having a rigid planar base. The flexible plate is supported above the rigid planar base (1) by a support structure (3) such that the planar rigid base, the support structure and the flexible plate enclose a volume filled with air, which is a gas.

As to claim 4, Jee depicts a cross sectional view (figure 1 and 2) of a rigid planar base being substantially rectangular.

Referring to claim 5, Jee depicts a squeeze film damper, showing a plurality (only 2 shown) of support structures (3 or 4) about the perimeter of the rigid planar base (1).

As to claim 6, Jee mentions that the attaching means of the squeeze film damper (2) to the surface (1) can be by flex strained processing and welding (see Col. 3, line 34 to Col. 4, line 5).

Referring to claim 9, Jee discloses that the surface to which the flexible plate (2) can be attached or replace with includes the surface of a vehicle component and the like (see Col. 3, lines 30-33).

As to claim 10, Jee discloses that the spacing between the base (1) and the cover (2) is between 0.01mm and 3mm (see Col. 2, lines 32-42).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yao-Joe Yang et al. 1997 IEEE International Conference, article title "Effect of air dampening on the Dynamics of Non-Uniform Deformations of Micro-Structures".

Referring to claim 3, Yao-Joe Yang discloses that the substantially rigid planar base (substrate) is substantially rectangular as seen in figure 1, but does not explicitly describe that the substrate can be substantially round. However, it appears that Yao-Joe Yang does not address the require structure or dimensions to

Art Unit: 2837

have a rigid planar base. It would have been an obvious design choice to one of ordinary skill in the art at the time of the invention to have a rigid planar base of different structures and dimensions (i.e. square, oval, round, etc.), since Applicant has not disclosed that having a rigid planar base that's round solves any stated problem or is for any particular purpose and it appears that the round shape would perform equally well as a rectangular shape planar base.

6. Claims 7, 11, 13 and 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jee in view of Leonetti et al. U.S. Patent No. 6,053,275.

Referring to claims 11, 13 and 15, Jee addresses all the similar limitations of claims 1, 2 and 4 above, but does not explicitly describe having an array of squeeze film dampers coupled to the vibrating surface. On the other hand, Leonetti et al. discloses an acoustical absorber array (figure 1) in which a plurality of acoustical absorption elements (20, 22, 24, 26) is attached to a surface (12). Since Jee and Leonetti et al. are in the same field of endeavor regarding sound absorption, the purpose disclosed by Leonetti et al. would have been recognized in the pertinent art of Jee. It would have been obvious to one of ordinary skill in the art at the time of the invention to have an array of acoustical elements as taught by Leonetti et al. within the teaching of Jee for the purpose/advantages that by having an array of sound absorption dampers a larger area can be cover; and the production and manufacturing inventory would be reduce, cutting back material cost and time.

As to claim 16, Jee depicts a squeeze film damper, showing a plurality (only 2 shown) of support structures (3 or 4) about the perimeter of the rigid planar base (1).

Referring to claim 17, the method step is obvious to the product structure of claim 11 above. Further discussion is omitted.

As to claims 18-21, Jee discloses that the surface to which the flexible plate (2) can be attached or replace with includes the surface of a vehicle component and the like (see Col. 3, lines 30-33). The phrase "the like" being interpreter as any interior surface that needs sound absorption.

Referring to claim 7, Leonetti discloses means for attaching the acoustical absorption elements to surface includes mechanical attachment, adhesive or fasteners (see Col. 3, lines 53-54).

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jee U.S. Patent No. 6,638,640.

Referring to claim 14, Jee discloses that the substantially rigid planar base (1) is substantially rectangular as seen in figure 1, but does not explicitly describe that the substrate can be substantially round. However, it appears that Jee does not address the require structure or dimensions to have a rigid planar base (1). It would have been an obvious design choice to one of ordinary skill in the art at the time of the invention to have a rigid planar base of different structures and dimensions (i.e. square, oval, round, etc.), since Applicant has not disclosed that having a rigid planar base that's round solves any stated problem or is for any particular purpose and

Art Unit: 2837

it appears that the round shape would perform equally well as a rectangular shape planar base.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jee and Leonetti et al. as applied to claim 11 above, and further in view of Murakami et al. U.S. Patent Application No. 2002/0108807 A1.

Referring to claim 12, Jee and Leonetti et al. address the limitations of claim 11 above, but do not explicitly describe that a foam cover is over the array of acoustical absorption elements. On the other hand, it is well known in the art of sound proofing as stated by Murakami et al. to use a soundproof cover over a specific area (i.e. engine compartment) to improve sound absorption and reduce leakage noise. Even though, Murakami et al. does not employ a particular foam cover above absorption elements. Murakami would be motivated to include further absorption of sound without compromising the weight factor. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a foam cover as taught by Murakami within the teaching of Jee and Leonetti et al. for the purpose/advantages that extra sound absorption would be recognize independently of the noise vibration reduction the array already performs.

Conclusion

9. The prior art made of record in form 892 and not specifically relied upon are considered pertinent to applicant's disclosure to further show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo Colon Santana whose telephone number is (571) 272-2060. The examiner can normally be reached on Monday thru Thursday 6:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on (571) 272-2800 X.33. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eduardo Colon Santana
Examiner
Art Unit 2837

ECS
March 2, 2006



KIMBERLY LOCKETT
PRIMARY EXAMINER